RecJ$_f$

NEW ENGLAND BioLabs Inc.
1-800-632-7799
info@neb.com
www.neb.com

M0264S 004120614061

M0264S

1,000 units **30,000 U/ml** **Lot: 0041206**
RECOMBINANT **Store at –20°C** **Exp: 6/14**

Description: RecJ$_f$ is a single-stranded DNA specific exonuclease that catalyzes the removal of deoxynucleotide monophosphates from DNA in the 5´ → 3´ direction (1). RecJ$_f$ is a recombinant fusion protein of RecJ and maltose binding protein (MBP). It has the same enzymatic properties as wild-type RecJ. Fusion to MBP enhances RecJ$_f$ solubility (2).

More Units, Higher Concentration Same Price

When DNA containing a 22 base 5´ extension is used as a substrate for RecJ$_f$, the resulting products are a mixture of DNA fragments that have blunt-ends, 5´ extensions (1–5 nucleotides) and recessed 5´ ends (1–8 nucleotides) (3). RecJ$_f$ does **not** require a 5´ phosphate (3).

Source: RecJ$_f$ is overexpressed and purified as a C-terminal fusion to MBP. MBP does not affect the catalytic activity of RecJ$_f$ but does enhance RecJ$_f$ solubility (2).

Supplied in: 50 mM KCl, 10 mM Tris-HCl (pH 7.4), 0.1 mM EDTA, 1 mM DTT, 200 µg/ml BSA and 50% glycerol.

Reagents Supplied with Enzyme:
10X NEBuffer 2

Reaction Conditions: 1X NEBuffer 2. Incubate at 37°C.

1X NEBuffer 2:
50 mM NaCl
10 mM Tris-HCl
10 mM $MgCl_2$
1 mM dithiothreitol
pH 7.9 @ 25°C

Unit Definition: One unit is defined as the amount of enzyme required to produce 0.05 nmol TCA soluble deoxyribonucleotide in a total reaction volume of 50 µl in 30 minutes at 37°C.

Unit Assay Conditions: 1X NEBuffer 2 and 1.5 µg sonicated single-stranded ^{3}H-labeled *E. coli* DNA.

Heat Inactivation: 65°C for 20 minutes.

Quality Control Assays

3´→ 5´ ss and ds Exonuclease Activity:
No detectable 3´→ 5´ nuclease activity was observed when 30 units of RecJ$_f$ was incubated with substrates containing either 3´ extensions or blunt-ends.

Endonuclease Activity: Incubation of 10 units of RecJ$_f$ with 1 µg ϕX174 for 4 hours at 37°C in a 50 µl reaction resulted in < 10% conversion to RF II.

Single-Stranded Endonuclease: Incubation of 50 units of RecJ$_f$ with 1 µg of ϕX174 Virion DNA for 4 hours at 37°C in a 50 µl reaction resulted in no decrease in the amount of closed circular DNA as determined by agarose gel electrophoresis.

References:

1. Lovett, S. T., Kolodner, R. D. (1989) *Proc. Natl. Acad. Sci. USA* 86, 2627–2631.
2. Lovett, S. and Whitaker, R. unpublished observations.
3. Whitaker, R. unpublished observations.

CERTIFICATE OF ANALYSIS

RecJ$_f$
NEW ENGLAND BioLabs Inc.
1-800-632-7799
info@neb.com
www.neb.com
M0264S 004120614061
M0264S
1,000 units 30,000 U/ml Lot: 0041206
RECOMBINANT Store at –20°C Exp: 6/14
Description: RecJ$_f$ is a single-stranded DNA specific exonuclease that catalyzes the removal of deoxynucleotide monophosphates from DNA in the 5´ → 3´ direction (1). RecJ$_f$ is a recombinant fusion protein of RecJ and maltose binding protein (MBP). It has the same enzymatic properties as wild-type RecJ. Fusion to MBP enhances RecJ$_f$ solubility (2).
More Units, Higher Concentration Same Price
When DNA containing a 22 base 5´ extension is used as a substrate for RecJ$_f$, the resulting products are a mixture of DNA fragments that have blunt-ends, 5´ extensions (1–5 nucleotides) and recessed 5´ ends (1–8 nucleotides) (3). RecJ$_f$ does not require a 5´ phosphate (3).
Source: RecJ$_f$ is overexpressed and purified as a C-terminal fusion to MBP. MBP does not affect the catalytic activity of RecJ$_f$ but does enhance RecJ$_f$ solubility (2).
Supplied in: 50 mM KCl, 10 mM Tris-HCl (pH 7.4), 0.1 mM EDTA, 1 mM DTT, 200 µg/ml BSA and 50% glycerol.
Reagents Supplied with Enzyme:
10X NEBuffer 2
Reaction Conditions: 1X NEBuffer 2. Incubate at 37°C.
1X NEBuffer 2:
50 mM NaCl
10 mM Tris-HCl
10 mM $MgCl_2$
1 mM dithiothreitol
pH 7.9 @ 25°C
Unit Definition: One unit is defined as the amount of enzyme required to produce 0.05 nmol TCA soluble deoxyribonucleotide in a total reaction volume of 50 µl in 30 minutes at 37°C.
Unit Assay Conditions: 1X NEBuffer 2 and 1.5 µg sonicated single-stranded ^{3}H-labeled *E. coli* DNA.
Heat Inactivation: 65°C for 20 minutes.
Quality Control Assays
3´→ 5´ ss and ds Exonuclease Activity:
No detectable 3´→ 5´ nuclease activity was observed when 30 units of RecJ$_f$ was incubated with substrates containing either 3´ extensions or blunt-ends.
Endonuclease Activity: Incubation of 10 units of RecJ$_f$ with 1 µg ϕX174 for 4 hours at 37°C in a 50 µl reaction resulted in < 10% conversion to RF II.
Single-Stranded Endonuclease: Incubation of 50 units of RecJ$_f$ with 1 µg of ϕX174 Virion DNA for 4 hours at 37°C in a 50 µl reaction resulted in no decrease in the amount of closed circular DNA as determined by agarose gel electrophoresis.
References:
1. Lovett, S. T., Kolodner, R. D. (1989) *Proc. Natl. Acad. Sci. USA* 86, 2627–2631.
2. Lovett, S. and Whitaker, R. unpublished observations.
3. Whitaker, R. unpublished observations.
CERTIFICATE OF ANALYSIS